fruit, and we should not find ourselves out-shot by semi-barbarous farmers.

Hope is the great incentive to exertion. Without it a nation is dead. Without it we lose all belief in the possibility of improvement, and improvement at once becomes impossible. The history of electrical engineering, the utilisation of the all-pervading ether for the service of man, should strenghen our hope and our belief in the possibility of improvement. For has it not revolutionised society and enabled high and low, rich and poor, to lead better lives, by making life less hard and grimy, and thus improved the well-being of man both materially and, what is far more important, morally as well?

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—The following are the principal lectures announced for this term:—Prof. Clifton, practical physics: Mr. Baynes, elementary electricity and magnetism; Mr. Jervis-Smith, dynamo and motor machinery, with electrical testing; Prof. Odling, silicon compounds; Dr. Fisher, metals and organic chemistry; Mr. Watts, organic chemistry; Mr. Marsh, practice of organic chemistry; Mr. Hartridge, aromatic compounds; Mr. Vernon Harcourt, subjects of the preliminary examination; Mr. Elford, the elements treated in the periodic order; Mendeleef's periodic system, Groups vii. and viii.; great chemists and their work; Mr. Walden, synthetical methods in organic chemistry; Mr. Wilderman, equilibrium and velocity of physical and chemical reactions in heterogeneous systems; Prof. Miers, the new theories of crystal structure; Mr. Bowman, the crystallography of optically active substances; Prof. Sollas, history of the earth; Mr. Mackinder, the natural regions of the Old World; Mr. Dickson, the climatic regions of the globe; Mr. Herbertson, mountain types; Prof. Weldon, general course of morphology; variation, inheritance, and natural selection; Mr. Goodrich, annelids; Mr. Jenkinson, vertebrate embryology; Mr. Günther, arthropoda; Mr. Barclay Thompson, mammalian morphology; mammalian palæontology; Prof. Gotch, the central nervous system; Prof. Gotch and Mr. Ramsden, advanced course of physiology; Mr. Mann, advanced histology of nervous system; Mr. Burch, physiological physics; Mr. Mann, practical histology; Prof. Vines, elementary course of botany; Prof. Tylor, early stages of civilisation (arts of subsistence and protection); Sir J. Burdon Sanderson, general pathology; Dr. Ritchie, pathological bacteriology; Dr. Collier, medical diagnosis; Mr. Symonds, fractures and dislocations; Prof. Thomson, vascular and respiratory systems; Mr. Smith Jerome, medical pharmacology and materia medica; Prof. Esson, the synthetic geometry of conics; Prof. Love, hydrostatics and hydronamics; Prof. Elliot, the theory of functions.

Mr. William Hatchett Jackson, science tutor of Keble College, who has been elected to the post of Radcliffe's librarian, vacant by the resignation of Sir Henry Acland, has entered on his duties. The new Radcliffe Library, erected for the University by the Drapers' Company, is meanwhile approaching completion.

Scholarships in natural science are announced by the following colleges:—Merton and New, July 3; Balliol, Christ Church and Trinity, December 4; Magdalen, December 11.

It has been decided that diplomas in geography shall be granted by the University; the details of the scheme have yet to come before Congregation and Convocation.

CAMBRIDGE.—Honorary degrees are to be conferred on the Hon. Edmund Barton, delegate from New South Wales in connection with the Australian Commonwealth Bill, and on H.M. the King of Sweden and Norway.

There are vacancies at the University Tables in the Zoological Stations of Naples and Plymouth. Applicants should write to Prof. Newton before May 24.

It is proposed to affiliate the University of Tasmania. Bachelors of Arts and Bachelors of Science of that University will thereby be entitled to proceed to Cambridge degrees after two years' residence.

The Financial Board estimate that, owing to the loss of fees, &c., consequent on the absence of many members of the University in South Africa, the income of the Chest will next year fall short of the necessary expenditure by 650*l*.

Seventeen additional freshmen were matriculated on May 5.

Mr. Thomas Andrews, F.R.S., has presented to the Chemical Laboratory a valuable echelon spectroscope, for which the special thanks of the University have been ordered.

DR. TUNNICLIFFE has been appointed to the chair of materia medica and pharmacology in King's College, London.

DR. JOHN WYLLIE has been elected to succeed the late Sir Thomas Grainger Stewart in the chair of medicine in the University of Edinburgh.

IN order to enable Essex dairy-farmers, and ladies engaged in dairy-work, to gain an insight into the organisation and practice of the agricultural industries of Denmark, the Essex Technical Institution Committee have made arrangements for a party to visit that country. Visits will be made to a number of schools and other institutions, farms, and manufactories concerned with dairying, and a valuable insight will be obtained into Danish methods. Full particulars of the programme can be obtained from Mr. T. S. Dymond, County Technical Laboratories, Chelmsford.

THE growth of municipal technical schools in England during the ten years which followed the passing of the Technical Institution Act, 1889, formed the subject of an inquiry made by the National Association for the Promotion of Technical and Secondary Education a short time ago. The results showed that a capital sum of 2,340,651*l* had been spent on technical schools, and that there were 239 such schools (including agricultural and dairy schools and domestic science schools) in existence or in course of establishment. Since the conclusion of the inquiry, technical schools had been erected, or it had been decided to erect them, in several other towns, and the latest report shows that the total amount incurred for 272 schools under municipal and public bodies is now at least 2,643,172*l*.

THE progress of science and education in the United States is largely due to the interest taken in the work of colleges and universities by private benefactors. Scarcely a week passes without affording instances of generous gifts to institutions of this kind, by persons who desire to promote the development of national character and industries. As an example of this public spirit, we have the case of Dr. D. K. Pearson, of Chicago, who, on attaining his eightieth birthday recently, decided to add 525,000 dollars to the 2,000,000 dollars he had previously given to colleges. Then we have the announcement in *Science* that Mr. Andrew Carnegie has promised the trustees of the Carnegie Institute, Pittsburg, Pa., to become responsible for 3,000,000 dollars, the amount estimated as necessary for the proposed extension and enlargement of the building at the entrance of Schenley Park. The new building will be nearly six times as large as the present one. We should be glad to be able to record many similar gifts to institutions devoted to science and education in this country.

ONE of the good effects of the technical education movement during the past ten years is that many secondary schools, such as grammar and endowed schools, which formerly excluded science from their curricula, have had to adapt themselves to modern requirements as a condition of receiving assistance from technical education authorities. The annual report of the National Association for the promotion of Technical and Secondary Education refers to an inquiry undertaken to determine the extent of the changes which have been brought about in this way, both by the establishment of new secondary schools and by the adaptation of existing secondary schools for the purposes of technical education. The facts revealed by the inquiry go to show that in England alone, since 1889, 81 new public secondary schools have been established, while 215 existing schools have been extended mainly for the purposes of science teaching. As regards the schools in the latter category, the extensions to 195 of them have resulted in the addition of 251 physical and chemical laboratories, 77 workshops for manual training, 76 lecture-rooms, and 50 class-rooms. The total sum of money involved by these developments is 764,449*l*. By their capital grants to secondary schools, County Councils have exerted a direct influence in the reorganisation, and have secured a voice in the management and control of the schools. By the Councils' annual maintenance grants, the work of reorganisation has been gradually consolidated, and the permanence of proper management and control has become assured. It is not surprising, therefore, that the latter, as a continuous source of income to secondary schools, have been increasing in number and in value during recent years.